GLADSHTEYN L.

PRIDANTSEV, M.V., prof.; BAT', A.A., inzh.; GLADSHTEYN, L.I., inzh.;
LEVINZON, Kh.Sh., inzh.

The ST.Zkp chilled steel as a new prospective material for steel
structures. Stroi. prom. 36 no.2:38-39 F '58.   (MIRA 11:2)

1. Gosudarstvennyy proyektnyy institut Proyektstal'konstruktsiya i
TSentral'nyy nauchno-issledovatel'skiy institut cherney metallurgii.
(Steel, Structural)

BAT', A. A. ; GLADSHTEYN, L. I.

Studying properties and weldability of thick 14XGS steel sheets.
Mat. po stal'. konstr. no.4:153-161 '59.   (MIRA 13:8)
(Sheet steel--Welding)

SOV/135-59-10-12/23

18(5,7)

AUTHOR: Gladshteyn, L.I.

TITLE: The Influence of Residual Stresses and Plastic Deformation on the Mechanical Qualities of the Weld Metal

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 10, pp 27-29 (USSR)

ABSTRACT: The author presents a study on several cases of residual stress and plastic deformations and their influence on the qualities of the weld metal. A survey of other studies on this subject is given, especially the works of G.A. Nikolayev, N.N. Prokhorov (Ref.3) and V.S. Ignat'yeva (Ref.4). Fig.1 gives a diagram of stretching, recorded during investigation of the weld metal. Curve 1 shows stretching in the initial state, curve 2 after 10% stretching, and curve 3 after 10% stretching and tempering at 250°C. Table 1 gives the chemical composition of the steels which have been used in the experiment. Table 2 shows the mechanical qualities of cylinders which have been welded on continous and compound plates. The results of the research on deformation are shown by the graphs in figs.4 and 5. Under the influence of residual stress and plastic

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SOV/135-59-10-12/23

The Influence of Residual Stresses and Plastic Deformation on the Mechanical
Qualities of the Weld Metal

deformation, the fluidity threshold   of the weld metal increases con-
siderably (14-19%). There are 5 graphs, 2 tables and 5 Soviet re-
ferences.

ASSOCIATION: GPI "Proyektstal'konstruktsiya"

Card 2/2

18(5)

AUTHOR: Gladshteyn, L.I., Engineer

SOV/125-59-10-8/15

TITLE: The Primary Crystallization of Seam Metal

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 10, pp 67-76 (USSR)

ABSTRACT: The article describes tests carried out on austerite
            seams, in which there is no secondary crystallization;
            shafts were welded onto plates of low-carbon steel by
            means electrodes with rods made of Kh25N20 chrome-
            nickel steel and a Kiyel'berg automatic welder. The
            welding conditions, which were constantly changed,
            are given in Table 1; Fig 1 provides a side-on view
            of the welded parts, from which test-piedes were cut
            and immersed for 25-30 mins in a reagent composed of
            $100cm^3$ concentrated hydrochloric acid, $50cm^3$ concentra-
            ted nitric acid, $50cm^3$ 28% acetic acid, and $150cm^3$
            glycerine. The subsequent formation of acicular crys-
            tals is shown in Fig 2 in magnified form (x 100),
            while Fig 3 illustrates the dendrite-type crystals to
            be seen in the upper layers of the seam. The data on
            the kinetics of the crystallization process was stu-
            died in a PMT-3 instrument for measuring microhardness,
Card 1/5   and it is shown that the size of the crystals is de-

The Primary Crystallization of Seam Metal

pendent on their distance from the welding mark (Table 2). According to D.D. Saratovkin $/\overline{\ }$Ref 5$\overline{/}$, the cause of the formation of dendrites is the addition of a basic substance in the fusion, and Fig 5 shows the formation of the primary crystal in diagram form. Saratovkin's diagrams for the border-state between fusion and incipient crystal are given in Fig 6, and work conducted by D.A. Petrov and A.A. Bukhanova on the crystallization of metals with a face-ventered cube is shown in Fig 7. The thickness of the crystal as it is formed is related to the variation in temperature of the welding process, and is expressed (Fig 8) as a

$$a = 2(T_n - T_k)tg\frac{\alpha}{2} \cdot \cfrac{1}{\frac{dT}{dN}(x,y_o,z_o)} \quad \text{(where } T_n \text{ and}$$

T_k are the temperatures at the beginning and end of the crystallization process, and $\frac{dT}{dN}(x,y_o,z_o)$ is the rise in temperature). By the application of N.N. Rykalin's equation $/\overline{\ }$Ref 7$\overline{/}$, the temperature gradient is found to be:

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ine Primary Crystallization of Seam Metal

$$T(y_0, z_0, t) = \frac{q}{2 \pi \lambda \, Vt} e^{- \frac{y_0^2 + z_0^2}{4at}}$$

(where T is the momentary temperature of the body at
a given point, t is the time from the source passes
the point under consideration, q is the thermal power
of the source, V is the speed of the source, and λ
and a are thermophysical constants). This equation
is then developed to $\frac{dT}{dN}(x, y_0, z_0) =$

$$= T \sqrt{\left(- \frac{V y_0}{2a(-x)}\right)^2 + \left[- \frac{V z_0}{2a(-x)}\right]^2 + \left[- \frac{1}{(-x)} - \frac{V(y_0^2 + z_0^2)}{4a(-x)^2}\right]^2}$$

Fig 9 shows how the thickness of the crystals increa-
ses as the temperature drops toward the outer edge of
the seam. The final section of the article deals with
the form of the crystals and the speed of the crystal-
lization isotherm. Fig 10 shows that the rate of

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The Primary Crystallization of Seam Metal

growth of the crystals may be regarded as equal to
the speed of the crystallization isotherm, which cons-
tantly varies. The speed of movement of any point on
the isothermic surface is equal to the welding speed
$v_N = V_x \cos(x,N)$, but $\cos(x,N) =$

$$= \frac{\frac{dT}{dx}(x,y_0,z_0)}{\frac{dT}{dN}(x,y_0,z_0)} \quad . \text{ By substituting equation}$$

7) for 6) and replacing the derivative and the gra-
dient by 4) and 5), given in the test, we obtain

$$V_N = V_x - \frac{\frac{V_x(y_0^2 + z_0^2)}{4a(-x)^2} - \frac{1}{(-x)}}{\sqrt{\left[-\frac{V_x y_0}{2a(-x)}\right]^2 + \left[-\frac{V_x z_0}{2a(-x)}\right]^2 \left[\frac{1}{(-x)} + \frac{V_x(y_0^2+z_0^2)}{4a(-x)^2}\right]}}$$

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The Primary Crystallization of Seam Metal

SOV/125-59-10-8/16

Table 3 contains the results of calculations based on the data in Table 1, which is the same as that obtained by M.V. Shamanin and V.A. Savchenkov /Ref 10/. There are 4 diagrams, 4 photographs, 3 tables, 2 graphs and 10 Soviet references.

ASSOCIATION: Gosudarstvennyy proyektnyy institut "Proyektstal-konstruktsiya" (State Planning Institute "Proyektstal konstruktsiya"

SUBMITTED: September 17, 1958

Card 5/5

GLADSHTEYN, L.I., inzh.

High-strength, heat-treated St.-5 steel bolts. Stal' 20
no.8:764-767 Ag '60.   (MIRA 13:7)

1. Proyektstal'konstruktsiya.
                (Bolts and nuts)

&29L2

S/125/61/000/006/006/010
D040/D112

I 2300
18.1111

AUTHORS: Mel'nikov, N. P., Gladshteyn, L. I., Malyshev, B. D.

TITLE: On the problem of high-strength steel application for welded
structures

PERIODICAL: Avtomaticheskaya svark., no. 6, 1961, 47-55 .

TEXT: The article is a general position review with practical suggestions
made in view of the growing amount of steel used for industrial structures.
The weight of structures is an acute problem. The ultimate strength of 250
kg/mm^2 reached in steel used in the machine industry shows what can be done
by selecting the optimum chemical composition. Already 350 kg/mm^2 has been
reached in experiments. The most used structural steel in the USSR was un-
til 1960 the НЛ-2 (NL-2) grade, called 15ХСНД (15KhSND) in ГОСТ 5058-57
(GOST 5058-57). It is now forbidden to use it for structures because of
high cost and high nickel and copper content. A manganese grade, 14Г2
(14G2) recommended in 1958 by TsNIIChM, TsNIISK and "Proyektstalikonstrukt-
siya" is coming into use in places: Dnepropetrovskiy zavod metallokonstrukt-
siy im. Babushkina (Dnepropetrovsk Metal Structures Plant im. Babushkin)

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On the problem of high-strength steel ...

S/125/61/000/006/006/010
D040/D112

22942

produced in 1960 blast furnace and recuperator casings as well as some other structures for the Novotul'skiy and the Magnitogorsk metallurgical plants, and the Chelyabinskiy zaved metallokonstruktsiy im. Ordzhonikidze (Chelyabinsk Metal Structures Plant im. Ordzhonikidze) used 700 tons of it for structures. A still cheaper silico-manganese steel, 15ГС (15GS), with the same properties as in the 14G2, will be available soon. But these two new grades cannot replace 15KhSND fully for they are not dependable for structures where strength is of critical importance. As nickel is scarce, 15KhSND ought to be produced at the Orsko-Khalilovskiy metallurgicheskiy kombinat (Orsk-Khalilovo Metallurgical Combine) from naturally alloyed ores. A promising replacement for 15KhSND is the МК (MK) or 10Г2СД (10G2SD), and М(Н), or 09Г2ДТ (09G2DT) of the Zhdanovskiy metallurgicheskiy zavod (Zhdanov Metallurgical Plant); its applicability should be checked without delay. The authors recommend the use of foreign bainite with 0.5% Mo and 0.001-0.004% B, having a 40-90 kg/mm yield limit, and the revision of the GOST standard that sets narrow limits for thickness of structural low-alloy steel. Cold working is an effective means for raising strength of structural steel, but it is only very little used. It is pointed out that the yield limit of steel rises with increase of the degree of cold deformation, particularly of low-alloy

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On the problem of high-strength steel ...

steel that assumes a bainite structure upon hardening. An example of deformation strengthening is found in the use of cold-strength steel for gas pipelines. Cold stretching in sheet stretching machines suggested by N. D. Kuzema and A. V. Prokhorov (Ref. 4: "Stal'", no. 1, 1960) should be used in rolling shops. Deformation strengthening was not used for structural steel because of the fear that it would raise embrittlement. But is has been stated in experiments at "Proyektstal'konstruktsiya" that slight elongation of the outer fiber raised the yield limit in low-alloy steel by $3.8 - 6.4$ kg/mm^2, reduced the elongation only $1.3 - 2.2\%$, did not change the ultimate tensile strenght and reduction of area, only insignificantly reduced the impact resistance. However, the critical brittleness point was slightly raised (by less than $20^{\circ}C$). In static tension tests deformation-strengthened specimens had high resistance to brittle rupture, and this shows that steel so strengthened can be used for static service structures. One more way to raise steel strenght is heat treatment. Institut Kachestvennykh staley TsNIIChM (Institute of High Grade Steels of TsNIIChM) studied the problem in 1956-1957 in conjunction with "Proyektstal'konstruktsiya" and it was concluded that hardening raises the yield limit by 20-25%, which means that the volume of metal in structures can be cut 15-20%. The hardening costst are low,

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On the problem of high-strength steel ...

The "T-1" steel grade used in the U.S. and Japan is mentioned as an example of effective economy and high strength, i.e. 63 kg/mm² yield limit. Another example is 96 kg/mm² yield limit steel for light-weight structures developed in Italy. It is necessary to improve the quality of low-alloy steel, develop new chemical compositions for economical and weldable high-strength steel, to use new methods for thermic and mechanical strengthening. Structure designs must have more elements under tension load. The last recommendation is for production engineers to find welding methods and types of joints that will not impair the strength of high-strength steel. There are 5 figures, 1 table and 10 references: 4 Soviet-bloc and 6 non-Soviet-bloc. The four latest references to English-language publications read: K. J. Irvine, F. B. Pickring, Low-carbon Bainitic Steels, "Journal of the Iron and Steel Institute", v. 187, pp 292-309, No. 4, 1957; J. M. Hodge, L. C. Bibber, Low-Alloy Steel for Pressure Vessels, "Iron and Steel", XII, No. 29, pp 551-555, 1956; Literature Survey of High-Strength Steels, "Welding Journal", May, No. 5, pp 251-255, 1954; L. C. Hollister, F. Asce, R. D. Sunbury, M. Asce, High-Strength Steels Show Economy for Bridges, "Civil Engineering", June, v. 30, No. 5, pp 60-63, 1960.

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On the problem of high-strength steel ...   3/1 /61/000/000/006/010
                                                   D040/D112

ASSOCIATION: GPI "Proyektstal'konstruktsiya" ("Proyektstal'konstruktsiya"
             State Planning Institute)

SUBMITTED: January 30, 1961

Card 5/5

MEL'NIKOV, N.P.; GLADSHTEYN, L.I.; MALYSHEV, B.D.

Use of high-strength steel in welded structures. Avtom. svar. 14
(MIRA 14:5)
no.6:47-55 Je '61.

1. Gosudarstvennyy proyektnyy institut "Proyektstal'konstruktsiya."
(Structural frames—Welding)
(Steel, Structural—Welding)

GLADSHTEYN, L.I., inzh.; MITROFANOV, A.A., kand.tekhn.nauk;
RUDCHENKO, A.V., inzh.

Comparison of converter and open-hearth St.3 plate steel.
Stal' 21 no.10:927-934 O '61.   (MIRA 14:10)

1. Proyektstal'konstruktsiya i TSentral'nyy nauchno-issledov-
atel'skiy institut chernoy metallurgii.
                         (Steel--Testing)

S/032/61/027/008/006/020
B107/B206

| 1710

AUTHOR: Gladshteyn, L. I.

TITLE: A method for the determination of the susceptibility of
              low-carbon steels to heat treatment

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 8, 1961, 960-961

TEXT: A new method was developed in order to check the effect of the rate
of cooling on the mechanical properties of low-carbon steels. The standard
method ГОСТ 5657-51 (GOST 5657-51) is insufficient for various reasons.
The new method consists in heating cylindrical rods (9.25 mm in diameter
and 200 mm in length to 550°C and subsequently immersing them to a depth
of 30 mm in cooling water while the remaining part is heat-insulated by
porcelain tubes. Preliminary experiments showed that thicker rods (9.25 mm
in diameter) have about the same rates of cooling. The rates of cooling
were measured by placing thermocouples outside the specimen and inside in
a longitudinal channel. An oscilloscope was used for recording. Fig. 2a
shows the variation in the rate of cooling along the specimen. The
specimens were tested mechanically. Their hardness was measured in the

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S/032/6 /027/008/006/020
A method for...   B'07/B206   X

usual way. Yield strength, conventional yield strength, relative elongation
and relative transverse contraction were determined by tensile tests. For
this purpose, specimens 5 mm in diameter and 10 mm in length were carefully
cut from the test rod (see Fig. 2b). Fig. 3 shows how the mechanical
properties change as a function of the cooling rate in steels with different
manganese contents. The method may also be used for tempered structural
steels. There are 3 figures.

ASSOCIATION: Institut Proyektstal'konstruktsiya (Proyektstal'konstruktsiya
               Institute)

Card 2/4

GLADSHEIN, L.I.

Using high-strength heat-treated steel in metal construction
elements. Prom. strol. 39 no. 2:41-45 '61.   (MIRA 14:2)

1. Institut Proyektstal'konstruktsiya.
                    (Steel, Structural)

S/137/62/000/001/081/237
A052/A101

AUTHORS: Bat', A.A., Gladshteyn, L.I.

TITLE: Plastic deformations at the cold rolling of sheet steel

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 10, abstract 1D66
             (Prom str-vo, no. 7, 1961, 18 - 22)

TEXT: Sheets of CT 3 (St 3) (killed) and 15 ΓC (15G8) steel of thick-
ness δ 20 and 30 mm were investigated. Blanks were cut out of these sheets with
oxygen and subjected to bending. It was determined that the low-carbon and low-
alloy sheet steel intended for constructions working under static loads at posi-
tive and negative temperatures and also for constructions subject to dynamic
loads at positive temperatures could be bent in a cold state on rolls with the
radius $\geqslant 12\,\delta$. At that the residual plastic deformation makes up 3%. Steel
intended for constructions working under dynamic loads at negative temperatures
must be subjected to the heat treatment after cold bending to the radius of under
25 δ.

                                              N. Yudina

[Abstracter's note: Complete translation]

Card 1/1

GLADSHTEYN, L.I., inzh.

Calculating the mechanical characteristics of the metal in a
weld joint made by multilayer welding. Mat. po mat. konstr.
no.7:177-192 '62.   (MIRA 17:1)

VAKHURKIN, V.M.; GLADSHTEYN, L.I.; KARMILOV, S.S.; KLIMOV, S.A.;
        LEVITANSKIY, I.V.; MALININ, B.N.; NOSOV, A.K.; PAL'M,
        Yu.A.; POLYAK, V.S.; POPOV, G.D.; RASSUDOV, V.M.;
        KRASYUKOV, V.P.; SOKOLOV, A.G.; Prinimali uchastiye:
        GORBATSKIY, Ye.I.; MATVEYEV, S.S.; STRELETSKIY, N.S.,
        prof., retsenzent; MUKHANOV, K.K., dots., retsenzent;
        BOLOTINA, A.V., red.; MIKHEYEVA, A.A., tekhn. red.

        [Light-weight supporting metal structures] Oblegchenrye
        nesushchie metallicheskie konstruktsii. Moskva, Gos-
        stroiizdat, 1963. 282 p.   (MIRA 17:2)

GLADSHTEYN, L.I., inzh.; KUZ'MIN, Yu.P., inzh.

      Weldability of hardened low-alloy structural steel. Svar,
      proizv. no.7:4-7 Jl '63.   (MIRA 17:2)

      1. Gosudarstvennyy institut po proyektirovaniyu, issledo-
      vaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

GLADSHTEIN, L. I.

Use of a shower for quenching low-alloy steel. Metalloved. i term. obr. met. no.12:4-6 [ ]   (MIRA 18:2)

1. Gosudarstvennyy institut po proyektirovaniyu i issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

GLADSHTEYN, L.I.; LEVITANSKIY, I.V.; GOROZHNYY, V.A.

    Bolt joints in elements of thermally hardened steel. Prom.
    stroi. 41 no.7:40-44 Jl '64.   (MIRA 17:8)

L 8550-66   EWT(d)/EWT(m)/EWP(k)/EWP   JG/HM/JD/   SOURCE CODE
IJP(c)

ACC NR: AP5009782

AUTHOR: Gladshteyn, L. I.; Averina, Z. N.

ORG: Proyektstal'konstruktsiya

TITLE: High-strength heat-treated bolts made of economically alloyed structural steel

SOURCE: Stal', no. 4, 1965, 375-378

TOPIC TAGS: metal hardening, tensile strength, alloy steel, high strength steel, structural steel, tempering, metal heat treatment

ABSTRACT: The authors studied the effect of heat treatment on the tensile strength of bolts made from nine types of nickel-free structural steel. These grades of steel were divided into three classes: 1) the most economic silicon-manganese, chrome-silicon-manganese and chrome steels 35GS, 25G2S, 30KhG2S and 40Kh; 2) chrome, chrome-manganese and chrome-silicon-manganese steels with additions of carbide-forming components (molybdenum and vanadium) of three melts (A, B and V); 3) carbon steels 45 and 80S (for comparison). Preparation of the specimens and testing methods are explained. For most of the steels studied, two maxima were observed in the strength of hardened bolts as a function of annealing temperature. In most cases, bolts which were quenched without annealing had low strength; the specimens underwent brittle destruction without any noticeable development of plastic deformation, and there was a

UDC: 621.992 : 66.046

L 8550-66

ACC NR: AP5009782

wide scatter in strength values. An increase in annealing temperature to 400-500°C increases the ductility of the bolt material, which is ordinarily accompanied by an increase in strength and a reduction in scattering of the test values. Ductility is still further increased and scatter is reduced to a minimum when the annealing temperature is increased to 600°C. However, in this case the tensile strength of the specimens falls sharply. The tendency to brittle breaking increases with the diameter of the bolts. Bolts made of steel in the first and third classes did not give the required strength properties. Bolt specimens 18 mm in diameter made of 80S steel annealed at 400 and 500°C showed a tensile strength of 160 kg/mm^2. However, bolts made from this grade of steel show an extremely low hardenability so that an increase in bolt diameter to 22 mm is accompanied by a noticeable reduction in strength. Steels in the second class gave the best results. Tensile strengths of 160-200 kg/mm^2 were attained after annealing at 200°C, and also at 400°C for B and V steels. All these bolts showed an increase in brittleness and a reduction in breaking stress at an annealing temperature of 300°C. Steels A and B were the most brittle of this class. The data show that the maximum strength level of hardened and tempered bolts made of a given steel is basically determined by three factors: carbon content, hardenability, and resistance to brittle breaking in the hardened state. Alloying with 0.1-0.3% vanadium and molybdenum increases the ductility and strength of hardened bolts. Orig. art. has: 7 figures, 2 tables.

SUB CODE: MM,AS/   SUBM DATE: 00/   ORIG REF: 003/   OTH REF: 000

       jw

Card 2/2

Fig. 1. Flat cut (a) and smooth (b) specimens
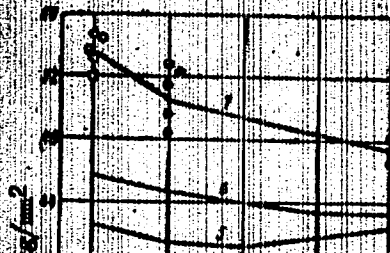for elongation testing at various temperatures.

Card 3/5

L 24151-65
ACCESSION NR: AP5002177

ENCLOSURE: 03

Fig. 3. The effect of test temperature
on the breaking point (mean values) of
slotted specimens of various types of
structural steels: 1 - low-carbon,
semi-dead-melt steel MSt.3ps; 2 - low-
carbon bubble MSt.3ks alloy I; 3 - low-
carbon bubble MSt.3ks alloy II; 4 -
low-carbon dead-melt MSt.3; 5 - low

Test Temperature °C

Card 5/5

BALKIN, V...; GLAE....YN, ..., ... , ...; ....

.... of the breakdown of ... .
43 no. .. ..

L 38484-66   EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/ETI/EWP(k)   IJP(c)   JG/HW/JD

ACC NR: AP6019425   SOURCE CODE: UR/0135/66/000/006/0003/0007

AUTHOR: Gladshteyn, L. I. (Candidate of technical sciences);
Khromushkin, D. N. (Engineer)

ORG: PROYeKTSTAL'KONSTRUKTsIYa

TITLE: Weldability of heat treated low alloy steels 12G2SMF and
12Kh2SMF

SOURCE: Svarochnoye proizvodstvo, no. 6, 1966, 3-7

TOPIC TAGS: low alloy steel, weldability, high strength steel, chemical com-
position, plasticity, hardness, weld evaluation/12G2SMF low alloy steel, 12Kh2SMF low alloy steel

ABSTRACT: The chemical composition and the mechanical properties of the
two steels are listed in a complete table. Tests were carried out to
determine the properties of the metal in welded joints with automatic
and manual welding. Conditions of welding and results of the tests are
shown in a second table. It was determined that introduction into non-
nickel low alloy steel of small additions of molybdenum and vanadium
(up to 2% each) makes it possible to obtain a sufficiently high strength
and plastic metal. In the arc welding of such a steel, there occurred
local loss of strength (5-30%); this was observed by measurement of the
hardness. Manual arc welding of high strength steel can be done with

Card 1/2   UDC: 621.791.01:669.15-194:669-15

L 38484-66

ACC NR: AP6019425

/

type UONI-13/85 electrodes. In automatic welding, satisfactory properties of the metal joint can be obtained using AN-348A flux and Sv-10G2 welding rods, thanks to the molybdenum and vanadium alloying additions. Welded joints of high strength steels with transverse butt joints have a greater tendency toward brittle fracture than the basic metal. Orig. art. has: 5 figures and 6 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 009

Card 2/2   pb

ACC NR: AP7000709

SOURCE CODE: UR/0133/66/000/012/1126/1131

AUTHOR: Gladshteyn, L. I.; Litvinenko, D. A.; Levinzon, Kh. Sh.

ORG: none

TITLE: Strengthening of structural steel by heat treatment

SOURCE: Stal', no. 12, 1966, 1126-1131

TOPIC TAGS: low alloy steel, structural steel, ~~structural~~ steel property, ~~structural~~ steel heat treatment, *metal heat treatment*

ABSTRACT: The effect of rapid cooling on the strength of several low-alloy structural steels has been investigated. St.3KP, 19G, 14G2 and 15GS structural steel plates, 20 mm thick, were quenched from 900C in various media. It was found that rapid cooling (water quenching) increases the yield strength up to 75 kg/mm^2 and the tensile strength up to 85 kg/mm^2 at an elongation of 10% and a reduction of area of 45%. Strengthening of low-alloy structural steel by heat treatment depends to a great extent on carbon, manganese and chromium contents and to a lesser degree on silicon content. Low-alloy steels with carbon content not more than 0.16% have high ductility at a wide range of quenching rates. By increasing the carbon content and by cooling at a rate of 40—50 degrees/sec, the ductility and notch toughness of these steels may drop due to the formation of heterogeneous structure. In welding, steels strengthened by heat treatment (yield strength 60—75 kg/mm^2 lose 10—30% of this strength in the weld-adjacent zone.
Card 1/2   UDC: 539.4.01:621.78/669.691.71

ACC NR: AP7000709

Small amounts of molybdenum and vanadium (0.2% of each) added to low-alloy steels do not affect significantly the strength of steels rapidly quenched from the austenitic state, but significantly strengthen steels which were cooled slowly or those which were annealed at high temperatures. This aids in preserving high strength of welds in steels strengthened by heat treatment. Orig. art. has: 7 figures and 3 tables.

SUB CODE: 11/3/SUBM DATE: none/ ORIG REF: 012/ OTH REF: 005/

Card   2/2

SOKOLOVSKIY, F.I.; GLADSHTEYN, L.N.; ISHCHENKO, A.A.

Properties of St.3ps semikilled steel for structural elements.
Prom.stroi. 42 no.2:36-40 '65.   (MIRA 18:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh
konstruktsiy i Gosudarstvennyy institut po proyektirovaniyu,
issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

KATSNEL'SON, L.S.; GLADSHTEYN, M.S.; YANKINA, N.I.

Chemical milling of aluminum alloys. Mashinostroenie no.5:90-
93 S-0 '63.   (MIRA 16:12)

GLADSHTEIN, R. ...

Vrucheonaia ekspertiza trudosposobnosti v lechebnykh uchrezhdeniiakh /Limited examination for able-bodiness at medical institutions/. Riga, 1958. 44 p.

SO: Monthly List of Russian Accessions. Vol. : No. 7 October 1958

GLADSHTEYN, R.M.

[Disability evaluation in hospitals and clinics; a manual for physicians] Vrachebnaia ekspertiza trudosposobnosti v lecheb-nykh uchrezhdeniiakh; rukovodstvo dlia vrachei. 2., izd. perer. Moskva, Medgiz, 1961. 174 p.   (MIRA 14:10)
(DISABILITY EVALUATION)

S/0129/64/000/005/0010/0013

ACCESSION NR: AP4037064

AUTHOR: Chudnovskaya, L. A.; Bernshteyn, M. L.; Granik, G. I.; Gladshteyn, V. A.

TITLE: Thermomagnetic Tempering of "R-18" Steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1964, 10-13

TOPIC TAGS: austenite transformation, variable magnetic field, tempering, bend test, automated heat treatment, high speed steel

ABSTRACT: The authors consider the possibility of accelerating the austenite transformation during magnetic tempering of high-speed steel in: (1) 75 mm-long specimens prepared from a ground rod with an 8 mm diam used for the determination of the amount of residual austenite and Hc; (2) 30 mm-long dilatometric specimens prepared from a ground rod with a 3 mm diam; and (3) 4.5 x 4.5 x 50 mm specimens prepared from 25 x 15 mm hot-rolled strip for bending tests. Tempering with the application of a 600 and 1200 e variable magnetic field greatly accelerates the transformation of residual austenite at 550-560 C; 30 min. holding results in complete transformation. The magnetic field has the same effect when applied during holding and quenching. Bending strength is enhanced at all temperatures.

Card 1/2

VOLOKH, D.M.; GLADSHTEYN, Yu.M. [Hladshtein, IU.M.]

Hemorrhage in labor and the influence of various factors on it.
Ped. akush. i gin. 22 no. 1:39-42 '60.   (MIRA 13:8)

1. Glavnyy akusher-ginekolog Poltavskogo obldravotdela, g.
Zaporozh'ye.
                (HEMORRHAGE, UTERINE)

KADUK, B.G.; GLADSKIY, A.I.

Analysis and investigation of some square-law detector
circuits.   Izm.tekh. no.2:38-42 F '63.   (MIRA 16:2)
                         (Electronic circuits)

STRIZHKOV, N.S., Inzh.; GLADKIY, V.I., trans.; RUBAN, E.A., Inzh.

Completely mechanized and finishing of the tracks on the Abakan-Tayshet line. Transp. stroi. 15 no.11:5-6 N '65.
(MIRA 18:11)

GLADTSINOV, B.

Importance of developing pipe lines to the national economy.
Vop.ekon. no.12:71-80 D '58.   (MIRA 11:12)
                (Pipelines)

GLADTSINOV B N

POVOROZHENKO, Vladimir Vasil'yevich, prof., doktor tekhn.nauk;
KOSTENKO, Ivan Georgiyevich, kand.tekhn.nauk; MAKHOTKIN,
Nikolay Aleksandrovich, inzh.; RUMYANTSEV, Sergey Mikhay-
lovich, inzh.; PARAKHONSKIY, Boris Mikhaylovich, kand.ekon.
nauk; SOLOV'YEV, Ivan Fomich, kand.tekhn.nauk; BAKAYEV,
V.G., doktor tekhn.nauk, red.; CHERNOMORDIK, G.I., doktor
tekhn.nauk, nauchnyy red.; IRKHIN, A.P., kand.tekhn.nauk,
nauchnyy red.; KUDRYAVTSEV, A.S., doktor ekon.nauk, nauchnyy
red.; GLADTSINOV, B.N., kand.tekhn.nauk, nauchnyy red.;
BYGEL', I.Yu., red.; LAVRENOVA, N.B., tekhn.red.

[Transportation in the U.S.S.R.] Transport SSSR. Pod
obshchei red. V.G.Bakaeva. Moskva, Izd-vo "Morskoi transport,"
1960. 536 p.   (MIRA 13:7)
                     (Transportation)

KADUK, B.G., GLAISKIY, A.I., ONOFRIYCHUK, Yu.A.

Amplifier with composite feedback. Avtom. i prib. no.3:
71-73 Jl-S '64.   (MIRA 18:3)

Z/056/62/019/002/005/014
I037/I242

AUTHORS: Bat', A., and Gladštejn, L.

TITLE: Plastic deformation of steel foil on cold rolling

PERIODICAL: Přehled technické a hospodářské Literatury, Hutnictví a strojírenství, v.19, no.2, 1962, 93, abstract HS 62-1187 (Prom. stroit., v.39, no.7, 1961, 18-22

TEXT: The immersion evaluation determines the smallest radius of curvature during the cold rolling of sheets for construction of vessels, kettles, etc. Experimental evaluation of the magnitude of plastic deformations, at which the construction steel still preserves the necessary transduction properties. The characteristics of investigated Soviet steel. The minimal bending radius of sheets of low-

Card 1/2

ADLIVANKINA, A.Ya.; GLADTSINOV, B.N.; KACHEVSKIY, V.I.; SHIRAEV,
      P.I., otv. red.; USVYATSOV, A.Ye., red.

      [Power engineering in the U.S.A.] Energetika SShA. Moskva,
      Nauka, 1965. 258 p.   (MIRA 18:6)

      1. Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy
      AN SSSR (for Adlivankina, Gladtsinov, Kachevskiy).

GLADUN, A. D.,

"Distribution of Potentials in the Region of Space-charge-limited Currents
in an Ideal Planar Triode with Minimum Potential Between the Cathode
and Grid," Research in Physics and Radio Engineering, Moscow,
Oborongiz, 1958. p.60. (RUBY IIFT/ r. 1

The book is a collection of 13 articles written by instructors and graduate
and undergraduate students of the Moscow Inst. of Physics and Technology.
The articles discuss problems in radiophysics, optics and physics.

TAGER, A.S.; GLADUN, A.D.

Use of cyclotron resonance in semiconductors for the amplification
and generation of superhigh-frequency oscillations. Zhur. eksp. i
teor. fiz. 35 no.3:808-809 S '58.   (MIRA 12:3)
                (Semiconductors) (Oscillations)

GLADUN, A.D.; PEREPELYATNIK, P.A.; MIGULIN, V.V.

Concerning V.N.IAkovlev's article, "Use of a slowly varying
parameters technique in studying nonlinear self-oscillatory
systems with delay." Radiotekh.i elektron. 8 no.2:355-357
F '63.   (MIRA 16:2)
        (Automatic control)   (Differential equations)

Card 1/3

L 64653-65

ACCESSION NR: AT5009548   9

and 6 hours for titanium. The error may amount to 10% below 20K and 3% at higher
temperatures. The relative accuracy of adjacent values of the thermal conductivity
is very high. "I thank Professor Doctor Hedicus for valuable suggestions and as

Dresden

SUBMITTED: 00   ENCL: 01   SUB CODE: TD, GP

NR REF SOV: 000   OTHER: 002

Card 2/3

L 64653-65

ACCESSION NR: AT5009548

ENCLOSURE: 01

GLADUN, I.N., inzh.; BYDEROVSKIY, S.I., inzh.; MART'YANOVA, M.I.

Record-breaking shaft sinking at a rate of 305.3 m. per month in South Africa. Shakht. stroi. 4 no.4:28-30 Ap '60.   (MIRA 13:11)
(South Africa, Union of--Shaft sinking)

BYDEROVSKIY, S.I., inzh.; GLADUN, I.N., inzh.; SHAVEUN, B.I.; LIYCHIK, V.M.

     Record-speed shaft sinking at the Vaal Reef mine.   Shakht.stroi.
4   no.2:30-32   F   '60.   (MIRA 13:5)
          (South Africa, Union of --Shaft sinking)

KOZBENKO, Yu.N., inzh.; GLADUN, I.N., inzh.

The BOS machine for boring horizontal holes. Shakht. stroi. 4
no. 5:19-22 My '60.   (MIRA 14:4)

1. TsNIIpodzemshakhtostroy.
                              (Boring machinery)

L 16896-65   EWT(1)/EWG(v)   Po-4/Po-5/Pq-4/Pg-4   GW
ACCESSION NR: AR4044502   S/0270/64/000/006/0030/0030

SOURCE: Ref. zh. Geodeziya. Otd. vy*p., Abs. 6.52.205

AUTHOR: Gladun, V.A., Marchuk, G.D., Panteleyev, V.L., Stroyev, P.A.

TITLE: Gravimetric investigations in the region of the Kurile-Kamchatka trench in the
northwestern part of the Pacific Ocean

CITED SOURCE: Sb. Morsk. gravimetr. issledovaniya. Vy*p. 2 M., Mosk. un-t, 1963,
77-85

TOPIC TAGS: gravimetry, gravimetric survey, sea gravimeter, deep seismic sounding,
Faye anomaly

TRANSLATION: In accordance with the plan for Soviet investigations under the Interna-
tional Geophysical Year program, the Tikhookeanskaya kompleksnaya geologo-

L 16896-65
ACCESSION NR: AR4044502

Research Institute of Geophysics). In 1958 these detachments carried out gravimetric
determinations in the investigated area along deep seismic sounding profiles and along

SUB CODE: ES   ENCL: 00

Card 2/2

SLATIN, V... mladshiy nauchnyy sotrudnik

Marine gravimetric measurements during the seventh voyage of the diesel-electric motorship "Ob'." Inform.biul.Sov.antark.eksp. no.41:30-42 '63.
(MIRA 17:1)

1. Gosudarstvennyy astronomicheskiy institut im. Shternberga.

GLADUN, V.A.; STROYEV, P.A.; USHAKOV, S.A.; FROLOV, A.I.

Geophysical studies of the earth's crust in the transition zone
from Antarctica to the Indian Ocean in the area between 55^η and
100°E. Dokl. AN SSSR 153 no.2:427-428 N '63.   (MIRA 16:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Predstavleno akademikom D.I.Shcherbakovym.

GLADUN, V.A.; DEMENITSKAYA, R.M.; STROYEV, P.A.; USHAKOV, S.A.;
     FROLOV, A.I.

    Some results of geophysical studies of the crustal structure
    in Antarctica to the north of Novolazarev Station. Dokl. AN
    SSSR 153 no.6:1398-1399 D '63.   (MIRA 17:1)

    1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
    i Nauchno-issledovatel'skiy institut geologii Arktiki. Pred-
    stavleno akademikom D.I. Shcherbakovym.

L 16149-65   EWT(1)   Pa-4   ESD(t)/SSD/AFWL/AFETR   GW
ACCESSION NR: AP4045632   S/0020/64/158/002/0345/0347

AUTHOR: Gladun, V. A.; Isayev, Ye. N.; Koryakin, Ye. D.; Stroyev, P. A.;
Ushakov, S. A.; Frolov, A. I.

TITLE: Results of geophysical investigations of the earth crust of the Antarctic
in the Enderby Land region

SOURCE: AN SSSR. Doklady*, v. 158, no. 2, 1964, 345-347

TOPIC TAGS: isostasy, earth crust, Antarctic, Enderby Land, geology, geophy-
sics

ABSTRACT: Antarctic is, on the whole, in a state of isostasy inspite of the ex-
cess of the ice load. This is, however, not true with respect to certain sections
of morphological structure. One of these sections is the Enderby Land where the
Soviet Antarctic Expedition conducted in 1961-1962 geological and geophysical
investigations of the earth crust. The map of the gravitational anomaly was pre-
pared, and the depth of the Mohurovicic surfaces determined. The measurements
indicate that the young block mountains in the west of Enderby Land are far from

Card 1/2

L 16149-65
ACCESSION NR: AP4045632

isostasy. The authors are grateful to R. M. Demenitskaya for discussions.
Orig. art. has: 3 figures

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova
(Moscow State University); Nauchno-issledovatel'skiy institut geologii Arktiki
(Scientific-Research Institute of the Geology of the Arctic)

SUBMITTED: 29Feb64   ENCL: 00

SUB CODE: ES   NO REF SOV: 006   OTHER: 001

Card2/2

GLADUN, V.G.

Analysis of agricultural traumatism in Zgurov District, Kiev Province, in the period 1955-1957. Nov.khir.arkh. no.6:130 N-D '58.
(MIRA 12:3)

1. Khirurgicheskoye otdeleniye Zgurovskoy rayonnoy bol'nitsy. Adres avtora: Zgurovka, Kiyevskoy oblasti, Rayzdravotdel.
(ZGUROV DISTRICT--AGRICULTURE--ACCIDENTS)

L 54583-65   EWT(d)/EED-2/EWP(L)   Pg-4/Pg-4/Pk-4   IJP(c)   BB/GG

ACCESSION NR: AP5012127   UR/0378/65/000/001/0092/0099
                                                 51:681.142

AUTHOR: Gladun, V. P.; Rabinovich, Z. L.

TITLE: Fast sorting algorithms within the operative memory

SOURCE: Kibernetika, no. 1, 1965, 92-99

TOPIC TAGS: sorting algorithm, operating memory, rapid sorting, algorithm speed

ABSTRACT: Two sorting algorithms within the operative memory are discussed. They are based on special matrices which register keys of the sorting rows and are effective if the

Card 1/2

L 54583-65
ACCESSION NR: AP5012127

ASSOCIATION: None

SUBMITTED: 12Oct64   ENCL: 00   SUB CODE: DP

NO REF SOV: 000   OTHER: 006

L 55995-65

ACCESSION NR: AP5009402   S/0208/65/005/002/0369/0372
                                           681.142.2

AUTHOR: Gladun, V. P. (Kiev); Letichevskiy, A. A. (Kiev); Mikhnovskiy, S. D.
(Kiev); Podkolzina, K. M. (Kiev); Rabinovich, Z. L. (Kiev)

TITLE: An extension of the logical possibilities of Algol-60 language

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 5, no. 2,
1965, 369-372

TOPIC TAGS: Algol language, computer language, computer programming

ABSTRACT: A variant of an extension of Algol-60 language is proposed in order to
simplify the programming of non-arithmetic problems and to increase access to the
intrinsic possibilities of the machine. In an effort to keep the language of Algol
independent of the individual machine, only one machine parameter, the length of
the machine word, was used in describing the semantics of the language. New vari-
ables are introduced: 1) a *string* is a variant of the Algol *line*: <line>::=any
sequence of symbols not containing "or" |<empty>; 2) a *code* is defined syntacti-
cally as follows:
<code position>::=1|0

Card 1/2

L 55995-65

ACCESSION NR: AP5009402

<code>::=<code position>|<code>|<code position>.
The type *string* should be assigned to variables and functions used as primary line
expressions, the type *code* to those used as primary code expressions. The logical
operations are defined only for codes of equal length. The length of strings is
limited by the number of symbols in a memory cell, as is the length of codes. The
results were tested by application to several specific programs. "The work was
discussed in a seminar on the theory of digital computers. The authors express
their sincere gratitude for a number of valuable observations and advice to V. M.
Glushkov, A. A. Stogniy, N. Z. Shor and others."

ASSOCIATION: none

SUBMITTED: 29Jun64   ENCL: 00   SUB CODE: DP

NO REF SOV: 000   OTHER: 001

Card 2/2

L 13913-66   EEC(k)-2/EWT(d)/EWP(1)   IJP(c)   BB/GG

ACC NR: AP6001200   SOURCE CODE: UR/0378/65/000/005/0035/0040

AUTHOR: Gladun, V. P. (Senior Engineer)

ORG: Institute of Cybernetics, AN UkrSSR (Institut kibernetiki AN UkrSSR)

TITLE: Sorting in the "matrix catalog" type memory

SOURCE: Kibernetika, no. 5, 1965, 35-40

TOPIC TAGS: digital computer, data processing, information storage and retrieval,
computer memory, algorithm

ABSTRACT: In a block of sentences, each sentence is determined by a specific key sign.
The machine code of the keys may be represented by a number. The phrases should be
ordered according to the increasing or decreasing sequence of the numbers associated with
the keys. The present paper studies the algorithm of sorting within the operative memory of
a digital computer based on the "matrix catalog" type organization of the memory. A brief
description is given of the "matrix catalog" approach and the rules for the writing down of new
sentences. The various aspects of the new phrase introduction algorithm are discussed. Four
sorting algorithms are presented for a) introduction of sorted sentences without the separation
of keys; b) introduction of sorted sentences with a separation of keys; c) ordering of the sorted

Card 1/2   UDC: 681.142.1.01

L 13918-66

ACC NR: AP6001200

block with the preliminary registration of keys; and d) ordering of the block without a prelimi-
nary registration of keys. The algorithms widen the scope of data processing problems which
may be solved by means of the matrix catalog. Orig. art. has: 4 formulas, 2 figures, and
1 table.

SUB CODE: 09/ SUBM DATE: 20May65/ ORIG REF: 003

Card 2/2

L 14/5' '-66   EWT(d)/EWP(1)   IJP(c)   BB/GG

ACC NR: AP6001199   SOURCE CODE: UR/0378/65/000/005/0032/0034

AUTHOR: Gladun, V. P., (Senior Engineer); Yakuba, A. A., (Aspirant)   54

ORG: Institute of Cybernetics, AN UkrSSR (Institut kibernetiki AN UkrSSR)

TITLE: Ordered retrieval of a list from the associative memory

SOURCE: Kibernetika, no. 5, 1965, 32-34

TOPIC TAGS: digital computer, data processing, information storage and retrieval, computer memory, algorithm

ABSTRACT: On the basis of a sorting method described earlier by one of the authors (V. P. Gradun, Z. L. Rabinovich, Kibernetika, No. 1, 1965), the present paper establishes an algorithm for the ordered retrieval of lists which is in many cases faster than the best existing algorithms. The detailed presentation of the algorithm is followed by an estimate of its speed and a comparison with the M. H. Levin (RCA Review, v. 23, n. 3, 1962) and Ahrons (RCA Review, v. 24, n. 3, 1963) algorithms. If the sign search time is 10, the address search time is 1, the base is 2, the number of binary order within one memory cell is 50, the number of digits in the sign code is 10, and m is the number of words comprising the list, then, starting with $m \geqslant 2$, the new algorithm is faster than the Levin algorithm, and for $m \geqslant 4$ the same is true with respect to the Ahrons approach. At very large and small m's, the speed of the algorithm may be increased further by the use of auxiliary scales. Orig. art. has: 2 formulas and 3 figures.

SUB CODE: 09/SUBM DATE: 19May65/ORIG REF: 001/ OTH REF: 005
Card 1/1 FW)   UDC:681.142.1.01

GLUŠLÜK, V.P.

Organization of memory for search and recording according to a
key. Kibernetika no. 4:83-92 Jl-Ag '65.   (MIRA 18:12)

1. Submitted March 26, 1965.

GLAGUL, Yu.D. [Hlahuz, IA.D.]

Content of iron, copper, zinc and cobalt in glejozen-like
bauquetals. Fizmatchov. zhur. 10 no.9:... -.. '54.

(MIRA 10;1)

1. Aptechnoye upravleniye Ivano-Frankovskogo oblastnogo
otdela zdravookhraneniya.

GLADUNCHIK, A.(Belgorod);KASHINTSEV,B.(Blagoveshchensk);BARANENKO,I.(g.Stalino)

First steps of new councils. NTO no.3:41 Mr '59.
                                        (MIRA 12:6)
1. Predsedatel' oblastnogo soveta nauchno-tekhnicheskikh obahche-
stv(for Gladunchik). 2. Chlen Amurskogo oblastnogo soveta nauchno-
tekhnicheskikh obshchestv (for Kashintsev). 3. Chlen oblastnogo
soveta nauchno-tekhnicheskikh obshchestv (for Baranenko).
                (Technical societies)

RAPPOPORT, M.B.;MOSKETI, K.V.; GLADUNETS, P.I.

Effect of cortisone on healing. Biul. eksp. biol. i med. 53 no.4:
108-110 Ap '62.   (MIRA 15:4)

1. Iz Arkhangel'skogo meditsinskogo instituta (dir. - dotsent A.A.
Kirov). Predstavlena deystvitel'nym chlenom AMN SSSR V.V.Parinym.
            (CORTISONE)   (WOUNDS)

RAPPOPORT, M.B.; MOSKETI, K.V.; GLALUNETS, P.I.

Effect of intramuscular injections of adenosine triphosphoric
acid on the course of wound healing; experimental study.
Klin. khir. no.2:60-63 '65.   (MIRA 18:10)

1. Arkhangel'skiy meditsinskiy institut.

CHUK, G.V., kand. khimich. nauk; MALKINA, I.V., inzh.; GLADKOY, N.N., inzh.;
    LEYBOVICH, N.I., kand. ekonom. nauk; TOKAI, I.N., inzh.

Investigating the quality of an enamel pipe coating. Proizv.
trub no.11:113-118 '63.   (MIRA 17:11)

Category : USSR/Optics - Optical Methods of Analysis.   Instruments   K-7

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 5167

Author   : Gladushchak, V I
Title   : Investigation of the Absolute Sensitivity of the Spectral Analysis of
           Copper

Orig Pub : Sb stud nauch rabot Tadzh un-ta, 1954, No 1, 69-72

Abstract : No abstract

Card   : 1/1

ZAYDEL', A.N.; MALYSHEV, G.M.; SHREYDER, Ye.Ya.; BEREZIN, A.B.; BELYAYEVA,
V.A.; GLADUSHCHAK, V.I.; SKIDAN, V.V.; SOKOLOVA, L.V.

Spectral investigations with the "Al'fa" installation. Zhur. tekhn.
fiz. 30 no.12:1422-1432 D '60.   (MIRA 14:1)

1. Fiziko-tekhnicheskiy institut AN SSSR i Nauchno-issledovatel'skiy
institut elektrofizicheskoy apparatury.
                    (Electric discharges)

GLADUSHCHAK, V.I.; SHREYDER, Ye.Ya.

Method for measuring the color temperature of light sources
using relative intensities of spectral lines. Opt. i spektr.
13 no.3:457-458 S '62.   (MIRA 15:9)
                        (Temperature—Measurement)
                            (Spectrum analysis)

GLADUSHCHAK, V. I.; KANEVSKIY, Yu. P.; SHREYDER, Ye. Ya.

"Energy Measurements in the Vacuum Ultraviolet."

report submitted to 11th Intl Spectroscopy Colloq, Belgrade, 30 Sep-4 Oct 63.

ACCESSION NR: AT4025292   S/0000/63/000/000/0042/0048

AUTHOR: Gladushchak, V. I.; Kanevskiy, Yu. P.; Shreyder, Ye. Ya.

TITLE: New method of energy calibration of vacuum spectral instruments

SOURCE: Diagnostika plazmy* (Plasma diagnostics); sb. statey. Moscow, Gosatomiz-
dat, 1963, 42-48

TOPIC TAGS: spectrometry, spectrometer calibration, spectral line intensity,
monochromator, spectrographic analysis

ABSTRACT: The graduation method proposed is suitable for the graduation of mono-
chromators as well as spectrographs. It is pointed out that prior calibration of
the spectral instrument is more practical than the use of a standard comparison
source, which in the vacuum region of the spectrum would have to be a synchrotron,
which in turn entails noticeable experimental difficulties. The calibration is by
recording on the vacuum spectral instrument the radiation from a source in which
the ratio of the spectral-line intensity can be determined from measurements in
the visible region of the spectrum and from the calculated transition probabilities.
The theory of such a method is described briefly and its errors are analyzed. The
method was used to calibrate a normal-incidence spectrograph (SP-99, grating with

Card 1/4

ACCESSION NR: AT4025292

2 meter radius and 1200 lines per mm, linear dispersion 4.1$\overset{o}{\text{A}}$/mm). The light source was a low-voltage vacuum spark. By recording the spectrum of the vacuum spectrograph on film and comparing the calculated intensity ratios with the experimental ones it was possible to determine a coefficient characterizing the transmission of the instrument and the quantum yield of the material employed. The tests were made against 12 lines of Al III. The Al III and SiIV lines were used for the calibration, and the transition probabilities for these lines was calculated from the tables of Bates and Damgaard (Phil. Trans. Roy. Soc. v. 242, 101, 1949). The radiation of the spark was simultaneously photographed on a quartz spectrograph (ISP-28) and on the calibrated instrument, and the intensities of the spectral lines were measured. The intensity ratios of the Al III lines were calculated. From the known transition probabilities and the temperature measured with the ISP-28. Several version of the measurement technique are also described. Orig. art. has: 3 formulas and 2 tables.

ASSOCIATION: None

SUBMITTED: 19Oct63   DATE ACQ: 16Apr64   INCL: 02

SUB CODE: GP, OP   NR REF SOV: 004   OTHER: 005

Card   2/4

ACCESSION NR: AT4025292   ENCLOSURE: 01

Al III

1	2	3	4
5806	$4S-4P_{3/2}$	3,4	17,8
4704	$4F_1-5D_1$	0,80	23,4
4529	$4P_{\frac{1}{2}}-4D_1$	16	20,5
4150	$4D_1-5F_1$	29	23,5
3713	$4P_{\frac{1}{2}}-5S$	4,4	21,1
3601	$3D_1-4P_{3/2}$	5,8	17,8
2961	$4F_1-6D_1$	0,34	24,9
2763	$4D_1-6F_1$	16	25,6
2213	$4P_{\frac{1}{2}}-5D_1$	1,04	23,4
1936	$3D_1-4F_1$	170	20,8
1855	$3S-3P_{3/2}$	21	6,6
1612	$3P_{\frac{1}{2}}-3D_1$	91	14,4
1384	$3P_{3/2}-4S$	17	15,6
1353	$3D_1-5F_1$	61	23,5
857	$3P_{3/2}-5S$	6,1	21,1
696	$3S-4P_{3/2}$	2,0	17,8
560	$3S-5P_1$	3,4	22,0

Si IV

1	2	3	4
4328	$5P_{\frac{1}{2}}-6S$	4,2	37,2
4212	$5D_1-6F_1$	23	?,6
4116	$4S-4P_{\frac{1}{2}}$	3,1	27,0
3762	$4D_{\frac{1}{2}}-5P_{3/2}$	9,2	34,2
3166	$4P_{3/2}-4D_{3/2}$	32	31,0
2287	$4D_1-5F_1$	89	36,4
2127	$4P_{\frac{1}{2}}-5S$	12	32,8
1727	$3D_{3/2}-4P_{\frac{1}{2}}$	10,5	27,0
1722	$3D_{3/2}-4P_{3/2}$	21	27,0
1394	$3S-3P_{1/2}$	35	8,
1128	$3P_{3/2}-3D_{5/2}$	170	19,8
1067	$3D_1-4F_1$	540	31,4
18	$3P_{1/2}-4S$	44	24,0
455	$3S-4P_{3/2}$	13	27,0

Transition probabilities of Al III and Si IV

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L 11168-63   EWT(1)/BDS—AFFTC/ASD

ACCESSION NR: AP3002791   S/0051/63/014/006/0815/0816

AUTHOR: Gladushchak, V. I.; Shreyder, Ye. Ya.

TITLE: On the possibility of using calculated oscillator strengths for calibra-
ting spectroscopic instruments.

SOURCE: Optika i spektroskopiya, v. 14, no. 6, 1963, 815-816

TOPIC TAGS: oscillator strengths, vacuum spectrometers, heterochromatic photome-
try, spectrometer calibration

ABSTRACT: The purpose of the work was to determine the feasibility of calibrating
vacuum spectrographs (for purposes of heterochromatic photometry) with the aid of
calculated and tabulated f-numbers (oscillator strengths). In view of the fact
that calculations of oscillator strengths are most accurate for atoms and ions
with one optical electron, the test was carried out for two pairs of lines each
of Be II and Al III. The measurements were carried out photographically on an
ISP-28 spectrograph; the f-number ratios for comparison were determined from the
tables of D. R. Bates and A. Damgaard (Phil. Trans. Roy. Soc., A242, 101, 1949).
The Be II lines were excited in a hollow cathode in a stream of helium; the Al
III lines were excited in a pulsed hollow cathode. The agreement of the experi-
mental and calculated ratios shows that for purposes of calibration it is

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L 11168-63
ACCESSION NR: AP3002791

feasible to use calculated oscillator strengths for the lines of ions with one
optical electron. "In conclusion, we thank A. N. Zaydel' for advice in carrying
out the work." Orig. art. has: 1 formula and 1 table.

ASSOCIATION: none

SUBMITTED: 03Dec62   DATE ACQD: 15Jul63   ENCL: 00

SUB CODE: 00   NO REF SOV: 003   OTHER: 003

1b/ウm

Card 2/2

ACCESSION NR: AP4042995   S/0051/64/017/001/0144/0146

AUTHORS: Gladushchak, V. I.; Shreyder, Ye. Ya.

TITLE: Measurements of absolute intensities in the vacuum region of the spectrum

SOURCE: Optika i spektroskopiya, v. 17, no. 1, 1964, 144-146

TOPIC TAGS: light source, spectrography, spectrum intensity, aluminum, silicon, spectrum line

ABSTRACT: Continuing earlier work (with A. N. Zaydel', ZhTF v. 31, 129, 1961), aimed at finding a light source capable of serving as a comparison standard in the vacuum region, the authors report on the suitability of a source comprising the low-voltage spark constructed by L. N. Kaporskiy and N. S. Sventitskiy (Izv. AN SSSR ser. fiz. v. 26, 857, 1962) used in conjunction with the Al III and Si IV lines, the transition probabilities of the latter being determined from the

Card
· 1/2

ACCESSION NR: AP4015323   S/0032/64/030/001/0047/0048

AUTHORS: Gladushchak, V. I.; Shreyder, Ye. Ya.

TITLE: Application of an impulsive discharge inside a hollow cathode for the
analysis of gaseous mixtures

SOURCE: Zavodskaya laboratoriya, v. 30, no. 1, 1964, 47-48

TOPIC TAGS: gas discharge tube, spectral analysis, impulsive discharge, gas
mixture

ABSTRACT: A more sensitive analysis of gaseous mixtures was accomplished by means
of a specially designed discharge tube with a hollow cathode as shown in Fig. 1 of
the Enclosure. The design permits detecting small amounts of components which are
otherwise difficult to excite. Using this apparatus, 0.02% helium in air at 5 mm
of Hg was detected by its 5876 Å line. Orig. art. has: 1 diagram.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk SSSR (Institute of
Physics and Technology, Academy of Sciences SSSR)

Card 1/2

L 9189-66   EWT(1)/T   IJP(c)

ACC NR: AR6000116   SOURCE CODE: UR/0058/65/000/008/D038/D038

SOURCE: Ref. zh. Fizika, Abs. 8D318   69

AUTHORS: Gladushchak, V. I.; Shreyder, Ye. Ya.; Kanevskiy, Yu. P.

ORG: none

TITLE: Energy measurements in vacuum ultraviolet

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, M., t. 2, vyp. 1, 1964, 561-566

TOPIC TAGS: UV spectrum, spectral line, line intensity, transition probability,
spectrographic camera, aluminum, silicon

TRANSLATION: A method is proposed for calibrating spectral instruments for the per-
formance of absolute and relative measurements of intensities in the vacuum region
of the spectrum. The calibration is by means of a source in which the relative and
absolute intensities of the spectral lines can be determined from measurements in the
visible region of the spectrum and from the calculated transition probability. The
source chosen for this purpose was a low-voltage vacuum spark between siluminum elec-
trodes. The method is applicable for the calibration of vacuum spectrographs by
means of the Al-III and Si-IV lines in the wavelength interval 450--2200 A.

SUB CODE: 20

Card 1/1

Gladushchenko, V. A.

Complex formation and double decomposition in a reciprocal system of fluorides and sulfates of lead and sodium. V. A. Gladushchenko and A. G. Bergman. J. Gen. Chem. U.S.S.R. 25, 1611–15 (1955) (Engl. translation).—See C.A. 50, 5386e.

B. M. R.

GLADUSHCHENKO, V.A.; BERGMAN, A.G.

Complexing and exchange decomposition in the reciprocal system of lead and sodium fluorides and sulfates. Zhur.ob.khim. 25 no.9: 1651-1658 S '55.

(MLRA 9:2)

1.Novocherkasskiy politekhnicheskiy institut.
(Lead salts) (Sodium salts) (Compounds, Complex)

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 371

Author: Gladushchenko, V. A., and Bergman, A. G.

Institution: None

Title: Complex Formation and Double Decomposition in a System Composed of Potassium and Lead Fluorides and Sulfates

Original Periodical: Zh. obshch. khimii, 1956, Vol 26, No 2, 339-347

Abstract: The mutual system K, Pb $\|$ F, SO_4 has been investigated by the visual-polythermic method together with its component binary systems. The existence of the compound $K_2F_2 \cdot 2K_2SO_4$ in the system K_2F_2 (I)-K_2SO_4 (II) has been confirmed; the compound melts at 880° and forms 2 eutectics: E_1 at 783° and 27 mole percent II and E_2 at 864° and 72.5 mole percent II. In the system II-$PbSO_4$ (III) the existence of the compound $K_2SO_4 \cdot 2PbSO_4$ has been established; the compound melts at 846° and forms 2 eutectics: E_1 at 805° and 45 mole percent III, and E_2 at 920°

Card 1/2

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical Analysis. Phase Transitions, B-8

GLADUSHCHENKO, V.A., assistent, kand. khim. nauk; BERGMAN, A.G., prof., doktor khim. nauk.

The irreversibly mutual system of lithium and lead fluorides and sulfates. Trudy NPI 27:49-60 '56.   (MIRA 10:12)

1. Kafedra obshchey i neorganicheskoy khimii Novocherkasskogo politekhnicheskogo instituta.
                          (Systems (Chemistry))

AUTHORS: Gladushchenko, V.A. Bergman A.G.   SOV/ 78-3-7-32/44

TITLE: The Exchange System Consisting of Fluorides and Sulfates of Sodium and Rubidium (Vzaimnaya sistema iz floridov i sul'fatov natriya i rubidiya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 7, pp 1650-1654 (USSR)

ABSTRACT: The exchange system Na Rb || F SO$_4$ was investigated by visual thermal methods. First of all the binary systems: 2 NaF Na$_2$SO$_4$, Rb$_2$SO$_4$ Na$_2$SO$_4$, RbF NaF and RbF Rb$_2$SO$_4$ were investigated. The system 2 NaF Na$_2$SO$_4$ contains the compound NaF.Na$_2$SO$_4$, the melting point of which is at 782°C. Solid solutions are formed in the system Rb$_2$SO$_4$-Na$_2$SO$_4$. In the system RbF NaF the eutectic mixture is at approximately 33% NaF and 644°C. The system RbF Rb$_2$SO$_4$ contains the compound RbF.Rb$_2$SO$_4$ the melting point of which is at 854°C. In the exchange system Na Rb || F SO$_4$ five crystallization ranges were found to exist. Two of them belong to the compounds NaF and RbF, two others to

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The Exchange System Consisting of Fluorides and Sulfates   ~~/,78~3 7-32/4+
of Sodium and Rubidium

the compounds NaF,Na$_2$SO$_4$ and KbF,Rb$_2$SO$_4$, and one to the solid
solution [Na,Rb]$_2$SO$_4$. The thermal effect of the exchange reaction
in the system Na Rb || F, SO$_2$ amounts to 8.83 kcal/eq.
The most stable section on the system investigated is the diagonal
section 2 NaF Rb$_2$SO$_4$. There are 6 figures, 2 tables, and 2 Soviet
references.

ASSOCIATION: Novocherkasskiy politekhnicheskiy institut im. S. Ordzhonikidze
                (Novoche kassk Polytechnic Institute imeni S.Ordzhonikidze)

SUBMITTED: June 7 1957

                1. Sodium fluoride--Exchange reactions   2. Rubidium fluoride
                --Exchange reactions   3. Sodium sulfate--Exchange reactions
                4. Rubidium sulfate--Exchange reactions

Card 2/2

5(2)

AUTHORS: Gladushchenko, V. A., Bergman, A. G.   SOV/78-4-9-27/44

TITLE: The Melting-point Diagram in the System of Chlorides and
              Sulfates of Silver and Lead

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9, pp 2007-2009
              (USSR)

ABSTRACT: After a short characterization of the binary systems: $PbCl_2 - PbSO_4$,

              $PbCl_2 - Ag_2Cl_2$, $Ag_2Cl_2 - Ag_2SO_4$, and $Ag_2SO_4 - PbSO_4$ (Table 1)
              a report is made on the investigation of 12 interior sections
              of the system mentioned in the title. The location of these
              sections is given in figures 1, 2. On the basis of the diagrams
              of the marginal zones, the diagonal and interior sections, the
              melting-point diagram was plotted (Fig 3). Above 300° it is
              schematical only and was found by extrapolation, since at high
              temperatures the vapor pressures of $PbCl_2$ was felt to impair the
              investigation. The diagram suggests a simple irreversible type
              of the singular type, without any formation of complexes or solid
              solutions, while in the system K,Ca || F,Cl, which is ...

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